

REMARKS

Claims 1-28 are pending. Claims 1-28 are rejected. The drawings are objected to. The specification has been amended. Formal drawings have been submitted. A terminal disclaimer has been submitted. An IDS has been submitted. Claims 21, 25, and 27 have been amended. No new matter has been added.

Amendment to the Specification

The specification has been amended to reflect the pending application's relationship to other applications filed by Applicant.

Objections to the Drawings

Figures 6 and 7 were objected to because of informalities appearing therein. New corrected drawings in compliance with 37 CFR 1.121(d) accompany this response. Applicants assert that these informalities have been remedied, and request that this objection be withdrawn.

Double Patenting

Claims 1, 7, 10, 16, 21, and 25 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over U.S. Patent Application Nos. 09/998,834, filed November 15, 2001, 09/998,856, filed November 15, 2001, 09/975,030, 09/975,105, 09/975,338, 09/992,076, 10/001,477, 10/001,478, 10/001,568, 10/004,039, and 10/004,197. A terminal disclaimer in compliance with 37 CFR 1.321(c) has been filed under separate cover as regards

Application No. 09/975,030 so as to obviate this rejection. Consequently, the Applicants request that the rejection be withdrawn.

35 U.S.C. 112 ¶ 2 Rejections

Claims 21-28 are rejected under 35 U.S.C. 112 ¶ 2 as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In particular, the rejection suggests that Claims 21 and 25 are incomprehensible. Claims 22-24 and 26-28, dependent upon Claims 21 and 25 respectively, inherit this defect. Claims 21 and 25 have been amended. Applicant respectfully asserts that Claims 21 and 25 as amended overcome the basis for rejection under 35 U.S.C. 112 ¶ 2.

35 U.S.C. 102(b) Rejections

Claims 1-28 are rejected under 35 U.S.C. 102(b) as being anticipated by Profit, U.S. Patent No. 5,911,059.

The Examiner is respectfully directed to independent Claim 1, which recites that an embodiment of the present invention is directed to:

For a system that includes a device under test and that includes an emulator device:

- a) emulating the functions of said device under test by operating in lock-step fashion with said device under test; and
 - b) performing a sleep operation, comprising:
 - b1) upon receiving a first signal that indicates that a sleep function is to be performed, initiating said sleep function at said device under test;
 - b2) turning off one or more clock of said device under test;
- and

b3) discontinuing execution of instructions that are performed in lock-step by said emulator device upon turning off said clock.

Claims 7, 10, 16, 21, and 25 recite similar limitations. Claims 2-6 are dependent upon Claim 1, and recite additional features of the claimed invention. Claims 8 and 9 are dependent upon Claim 7, and recite additional features of the claimed invention. Claims 11-15 are dependent upon Claim 10, and recite additional features of the claimed invention. Claims 17-20 are dependent upon Claim 16, and recite additional features of the claimed invention. Claims 22-24 are dependent upon Claim 21, and recite additional features of the claimed invention. Claims 26-28 are dependent upon Claim 25, and recite additional features of the claimed invention.

The rejection suggests that Profit discloses every element of the present invention recited in Claim 1. Applicant has reviewed Profit, and respectfully disagrees. Applicant contends that Profit fails to disclose emulating the functions of a device under test by operating in lock-step fashion with the device under test, as claimed.

Applicants understand Profit to show a hardware simulator running on a host computer, see col. 5, ln. 63-67. Profit explains that this hardware simulator is used to emulate the target *circuitry*, which is the external circuitry that interacts with the target microprocessor, see col. 1, ln. 20-24. The hardware simulator of Profit does not emulate the device under test. Profit describes the hardware simulator as being a conventional software program that simulates the electrical and logical activity of the *target circuitry* as seen by the target processor; see col. 6, ln. 25-29. From the example provided, the

hardware simulator of Profit is principally a processor model shell, which simulates activity at the target processor's pins; it does not emulate the processor's functionality, see col. 6, ln. 25-48. Applicants assert that Profit does not disclose emulating the functions of a device under test.

The rejection also suggests that Profit discloses operating in lock-step fashion with the device under test, as claimed. However, the portion of Profit offered to show this element do not show lock step operation. Profit describes the operation of the simulation time keeper circuit, which may serve as a clock to keep the processor emulator and the hardware emulator running synchronously; see col. 10, ln. 32. through col. 11, ln. 43. However, as noted previously, the hardware simulator emulates the operation of the target circuitry; it does not emulate the device under test, as claimed. Moreover, Profit's example of the interaction between the target microcontroller and the hardware simulator does not suggest running the microcontroller code on both. Instead, the hardware simulator receives instructions from the microcontroller to execute certain behaviors, and converts interrupts and other events into processor functions that allow the target program executing in the processor emulator to handle the interrupt or event; see col. 6, ln. 25-47.

Therefore, Profit does not anticipate or render obvious the embodiments of the present invention recited in Claims 1, 7, 10, 16, 21, and 25. Applicant respectfully submits that Claims 1, 7, 10, 16, 21, and 25 overcome the basis for rejection under 35 U.S.C. 102(b), and are in condition for allowance. Accordingly, Applicant respectfully submits that Claims 2-6, dependent upon Claim 1, Claims 8 and 9, dependent upon Claim

7, Claims 11-15, dependent upon Claim 10, Claims 17-20, dependent upon Claim 16, Claims 22-24, dependent upon Claim 21, and Claims 26-28, dependent upon Claim 25, overcome the basis for rejection under 35 U.S.C. 102(b), as they are dependent on allowable base claims.

Conclusion

In light of the above-listed amendments and remarks, Applicants respectfully request allowance of the remaining Claims.

The Examiner is urged to contact Applicants' undersigned representative if the Examiner believes such action would expedite resolution of the present Application.

Respectfully submitted,

WAGNER, MURABITO & HAO LLP

Date: 10/5, 2005



Kevin A. Brown
Reg. No. 56,303
Two North Market Street
Third Floor
San Jose, California 95113
(408) 938-9060